

of eggs to cocoons, mostly in midsummer, to be 52 days. At Coalburgh, the broods ran from 33 days in April and May to 28 days in June and July. The larval period only at Albany was 33 days, at Coalburgh 22 and 18 days. Perhaps in attaining to a double or triple annual generation, the species has come to have its larval stages diminished by one, and in W. Va. molts three times while at Albany it molts four times.

Mr. Trouvelot (Amer. Nat., v. 1, p. 37) has recorded his observations on the allied silk-worm moth *Telea polyphemus*,

and says: "The *polyphemus* worm, like all other silk worms, changes its skin five times during its larval life."

In the Entomologist, London, 1879, v. 12, p. 26 et seq., Mr. P. H. Gosse details at great length the larval history of *Attacus atlas* from farther Asia, bred by him from eggs obtained from the female which had emerged from cocoon in Europe. He describes in full five molts.

The only other large moth whose larval stages I have carefully watched is *Dryocampa imperialis*, which has four molts only.

EFFECT OF COLD APPLIED TO CHRYSALIDS OF *LIMENITIS DISIPPUS*.

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I SUCCEEDED in bringing two larvae through the last winter. No. 1 pupated at 3 p. m., 22 April. At 9 p. m., same day, I placed the chrysalis in an ice box, where it remained till 9 p. m., 6 May, 14 days. No. 2 pupated at 7 p. m., 27 April, and at 7 a. m., next day, the chrysalis was put on ice and remained till 7 a. m., 7 May, 10 days. Temperature, 40° F. [4° C.]. (In 1880, I subjected two chrysalids of this species to a temperature of 32° F. [0° C.], and killed both.)

On 13 May, two butterflies emerged: from No. 1, a ♂; the other ♀. Both are alike in color above and below; above dark, resembling southern *Danaïs archippus*. In the ♂, the black mesial band on hind wings is wider than usual, though I have one example, bred at Coalburgh, like it; but in the female, this

band is extraordinary, nearly three times as wide as usual, measuring 2.5 mm. at the cell. Beneath, in both, the whole hind wing is very light, a fawn-color, with no fulvous tint, quite unlike any Coalburgh or western or southern example, though resembling Catskill examples, except that these have a tint of fulvous.

As appears, the change is most decided in the female, though this was exposed when 12 hours old and for 10 days only, against 14 days in the male, at 6 hours old.

I had hoped to see the butterflies much melanized, and so approaching *Limenitis proserpina*, from which it has been conjectured *disippus* is derived. But nothing has occurred in support of that view.